



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/848,953	05/03/2001	Kevin Hickerson	0007975-0007	6923
23600	7590	07/27/2005	EXAMINER	
COUDERT BROTHERS LLP 333 SOUTH HOPE STREET 23RD FLOOR LOS ANGELES, CA 90071			CHAWAN, SHEELA C	
			ART UNIT	PAPER NUMBER
			2625	

DATE MAILED: 07/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/848,953

Applicant(s)

HICKERSON ET AL.

Examiner

Sheela C. Chawan

Art Unit

2625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-69 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-69 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Response to Amendment***

1. Applicant's amendment filed on May 13, 2005 has been entered and made of record.

Claims 1- 69 are pending in the application.

***Response to Arguments***

2. Applicant's arguments filed on May 13, 2005 have been fully considered but they are not persuasive.

In the remark, applicants have argued in substance that:

1. Paek does not disclose a special purpose hardware unit.

In the reply, the examiner states the following.

As to point 1, with respect to the art rejection, the examiner has carefully considered applicant's argument, but firmly believes the cited reference to reasonably and properly meets the claimed limitation, with respect to applicant's argument. The examiner does not agree with the remarks that Paek cannot be said to suggest a special purpose hardware unit as stated in the rejection. Examiner defines hardware unit as in computer design and electronics a term describing a function or capability that is built into system using hardware such as logic circuits as opposed to one that is attained through programming (software). More generally hardware refers to a computer or other device that is physically connected to a system or a network. Therefore, in Paek reference on page 2114, paragraph 3, Recognition method in which an the input data is considered to be a user writing a character on a tablet using pen like stylus, the

Art Unit: 2625

tablet periodically samples coordinates of the hand written pattern and send to the first network as shown in fig 3.2, which is considered to be overall structure of recognition networks, Basically examiner consider overall structure of recognition networks as a special hardware unit. However, applicant is reminded that the claim language is given its broadest reasonable interpretation and applicant cannot rely upon the features from the specification brought out in the claims because the specification is not the measure of the invention but claims are Therefore, Paek does teach this limitation.

### **DETAILED ACTION**

#### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 2, 24-25, 47 and 48 are rejected under 35 U.S.C. 102(e) as being anticipated by of S.H.Paek et al., " On-Line Korean Character recognition by Using Two

Art Unit: 2625

Types of Neural Networks", Dept. of computer Science and Engineering, Pages 2113-2116.

As to claim 1, S.H.Paek et al discloses a method of translating handwritten (Hangul) (Korean Characters) input to machine-readable characters (fig 3.2, page 2114-2115) comprising:

obtaining a first data item (note, acquiring input information corresponds to a user writing a character on a tablet using a pen like stylus, the tablet periodically samples coordinates of the hand written pattern and sends to the first network to be processed see page 2114, paragraph 3.1); and

performing one or more recognition processing (page 2114, paragraph 3 performing recognition method) operations upon said first data (see page 2114, paragraph 3.1, item by a special purpose hardware unit (note in fig 3.2, which is considered to be overall structure of recognition networks, Basically hardware unit ( which is composed of character construction network and stroke recognition network all these put together is consider to be hardware unit ) to produce a second data item see page 2114, paragraph 3.1 and 3.2).

As to claims 2, 25 and 48, S.H.Paek discloses the method wherein said data item is a handwritten symbol (processing on-line handwritten (Hangul) (Korean Characters).

As to claim 24, see the rejection of claim 1, above.

As to claim 47, see the rejection of claim 1, above.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claims 3 -15, 20-23, 26-38, 43-46, 49- 61, 66-69, are rejected under 35 U.S.C. 103(a) as being unpatentable over of S.H.Paek et al., " On-Line Korean Character recognition by Using Two Types of Neural Networks", Dept. of computer Science and Engineering, Pages 2113- 2116, as applied to claims 1, 2, 24-25, 47 and 48 above and further in view of Shustorovich et al. (US. 5,542,006).

Art Unit: 2625

Regarding claims 3, 26 and 49, S.H.Paek et al., disclose " On-Line Korean Character recognition by Using Two Types of Neural Networks". S.H.Paek is silent about specifics details of altering a data item by a preprocessor to reduce form.

Shustorovich discloses a neural network based character position detector for use in optical character recognition. The system comprises of:

altering (note, altering is like filtering the data in the reduce form, column 9, lines 1-16) said first data item by a preprocessor (fig 10, item 1030, corresponds to preprocessor) to a reduced form (column 6, lines 27- 47, column 9, lines 1-16).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify S.H.Paek et al to include altering a data item by a preprocessor to reduce form. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify S.H.Paek by the teaching of Shustorovich in order to remove or reduce the artifacts in characters recognition, (as suggested by Shustorovich at column 15, lines 49 – 51).

As to claims 4, 27 and 50, Shustorovich discloses the method wherein said step of altering is fully information preserving (note, altering is like filtering the data in the reduce form, to preserve the information, column 6, lines 27- 47, column 9, lines 1-16).

As to claims 5, 28 and 51, Shustorovich discloses the method further comprising: selecting one or more machine-readable characters by a postprocessor (column 5, lines 52-61, fig 1, item 156 and 170).

As to claims 6, 29 and 52, Shustorovich discloses the method wherein said special purpose hardware unit is configured to perform a first recognition processing

Art Unit: 2625

operation (column 6, lines 27- 47) and a second recognition processing operation (column 6, lines 48- 57) in parallel (column 2, lines 5-13).

As to claims 7, 30 and 53, Shustorovich discloses the method wherein said special hardware unit is configured to perform hidden Markov model computations (column 5, lines 48- 61).

As to claims 8 and 31, Shustorovich discloses the method wherein said special purpose hardware unit comprises:

a memory unit (fig 1, item 152 and 165, column 4, lines 34 – 35).

As to claims 9, 32 and 55, Shustorovich discloses the method further comprising: presenting said machine readable characters to a user (column 1, lines 59- 67).

As to claims 10, 33 and 56, Shustorovich discloses the method further comprising:

obtaining an indication from said user of whether said machine readable characters are a correct translation of said data item (column 1, lines 59- 67).

As to claims 11, 34, 54 and 57, Shustorovich discloses the method wherein said data item is a combination of a plurality of handwritten symbols (fig 3A, column 1, lines 59- 67).

As to claims 12, 35 and 58, Shustorovich discloses the method further comprising:

adjusting the operation of said special purpose hardware unit in accordance with a set of training data (column 4, lines 34 - 42).



Art Unit: 2625

As to claims 13, 36 and 59, Shustorovich discloses the method further comprising:

adjusting the operation of said preprocessor (column 5, lines 8-12) in accordance with a set of training data (column 4, lines 34- 42).

As to claims 14, 37 and 60, Shustorovich discloses the method further comprising:

adjusting the operation of said postprocessor (column 6, lines 50 -57) in accordance with a set of training data (column 4, lines 43 - 48).

As to claims 15, 38 and 61, Shustorovich discloses the method wherein said step of selecting comprises:

determining a context of said data item (column 1, lines 59- 67).

As to claims 21, 44 and 67, Shustorovich discloses the method wherein said hidden Markov model operations are forward probability calculations (column 16, line 6 through column 17, lines 1-13).

As to claims 22, 45 and 68, Shustorovich discloses the method wherein said hidden Markov model operations are backward probability calculations (column 16, line 6 through column 17, lines 1-13).

As to claims 23, 46 and 69, Shustorovich discloses the method of wherein one or more wordlets are part of a symbol alphabet (column 2, lines 45- 57).

As per claim 20, S.H.Paek et al., disclose " On-Line Korean Character recognition by Using Two Types of Neural Networks". The system comprising:

Art Unit: 2625

obtaining a first data item (note, acquiring input information corresponds to a user writing a character on a tablet using a pen like stylus, the tablet periodically samples coordinates of the hand written pattern and sends to the first network to be processed see page 2114, paragraph 3.1); and

S.H.Paek is silent about specifics details of performing one or more hidden Markov model operations upon said first data item.

Shustorovich discloses neural network based character position detector for use in optical character recognition. The system comprises of:

performing one or more hidden Markov model operations upon said data item as taught by Shustorovich (column 5, lines 48- 60). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify S.H.Paek to include one or more hidden Markov model. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify S.H.Paek by the teaching of Shustorovich in order to provide fast and often surprisingly good output approximations results, (as suggested by Shustorovich at column 2, lines 9- 13).

As to claim 43, see the rejection of claim 20, above.

As to claim 66, see the rejection of claim 20, above.

5. Claims 16 –19, 39-42 and 62-65 are rejected under 35 U.S.C. 103(a) as being unpatentable over S.H.Paek et al., " On-Line Korean Character recognition by Using Two Types of Neural Networks", Dept. of computer Science and Engineering, Pages 2113- 2116, in view of Shustorovich et al. (US. 5,542,006), as applied to the claims 1-15, 20-38,43-61, and 66-69 above and further in view of Friend et al. (US. 5,455,901).

Art Unit: 2625

Regarding claims 16, 39 and 62, S.H.Paek et al., disclose " On-Line Korean Character recognition by Using Two Types of Neural Networks". S.H.Paek is silent about specifics details of determining a correctly spelled word wherein said machine readable characters appear in said correctly spelled word and said correctly spelled word is appropriate for said context.

Friend discloses an input device which is related to the field of handwritten data entry in computer system and it ability to translate original handwritten strokes of ink or blocks of ink into machine-readable words or characters for display. The system comprises of:

determining a correctly spelled word wherein said machine readable characters appear in said correctly spelled word and said correctly spelled word is appropriate for said context (column 2, lines 1- 37, column 6, lines 56- 67, column 7, lines 14- 47, column 9, lines 6- 15). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified S.H.Paek to determine a correctly spelled word wherein said machine readable characters appear in said correctly spelled word and said correctly spelled word is appropriate for said context. It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified S.H.Paek by the teaching of Friend in order to provide an improved data entry for handwriting entry computer system by disabling the automatic display of a translation of the entered data, (as suggested by Friend at column 4, lines 9- 11).

As to claims 17, 40 and 63, Friend discloses the method wherein said step of selecting further comprises:

Art Unit: 2625

determining whether machine readable characters are grammatically incorrect for said context (column 2, lines 1- 37, column 6, lines 56- 67, column 7, lines 14- 47, column 9, lines 6- 15).

As to claims 18, 41 and 64, Friend discloses the method of claim 15 wherein said step of selecting further comprises:

determining a word in which said machine readable characters appear in said word and said word appeared previously in said context (column 6, lines 56- 67, column 7, lines 1 - 47).

As to claims 19, 42 and 65, Friend discloses the method of claim 15 wherein said step of selecting further comprises:

examining a set of user information (column 7, lines 31- 47).

6. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP . 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Art Unit: 2625

**Contact Information**

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheela C Chawan whose telephone number is. 571-272-7446 . The examiner can normally be reached on Monday - Friday 7.30 - 4.00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on 571-272-7453 . The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Sheela Chawan  
Patent Examiner  
Group Art Unit 2625  
July 13, 2005